Syllabus

TECH 123 Digital Electronics

General Information

Date November 13th, 2020
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Department Science and Technology
Course Prefix TECH
Course Number 123
Course Title Digital Electronics

Course Information

Catalog Description  This first-year course focuses on the theory and application of digital devices and circuits. Topics investigated include digital signals, binary number systems, Boolean algebra and Karnaugh mapping circuit reduction techniques. Digital devices/circuits tested include basic logic gates, flip-flops, counters, adders, registers, encoders, decoders, multiplexers, demultiplexers, and analog-digital converters.

Credit Hours 3
Lecture Contact Hours 2
Lab Contact Hours 3
Other Contact Hours 0
Grading Scheme Letter

Prerequisites

MAT 145

Co-requisites

None

First Year Experience/Capstone Designation
This course DOES NOT satisfy the outcomes applicable for status as a FYE or Capstone.

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed categories
None

FLCC Values

Institutional Learning Outcomes Addressed by the Course
Inquiry and Perseverance

Course Learning Outcomes

Course Learning Outcomes

1. Use Boolean Algebra to simplify digital circuits.
2. Simulate digital circuits.
3. Construct and verify digital circuits.

Outline of Topics Covered

I. Analog vs Digital Systems
II. Binary Numbers
III. Logic Gates: AND OR NOT
IV. Logic Gates: NAND and NOR
V. Simple Logic Gate Circuits
VI. Boolean Algebra
VII. Karnaugh Maps
VIII. Binary Coded Decimal
IX. Seven-Segment Display Decoder
X. Half Adder
XI. Full Adder
XII. Two’s Complement Arithmetic
XIII. Binary Subtraction Circuit
XIV. Flip-Flops
XV. Counters
XVI. Multiplexers
Program Affiliation

This course is required as a core program course in the following program(s)

AAS Instrumentation and Control Technologies